Helmet and Seatbelt Use

The Youth Risk Behavior Survey includes questions on use of motorcycle helmets, bicycle helmets, and seatbelts.

Overall Trends

There was very little improvement from 1991 to 1999 in reported usage of bicycle or motorcycle helmets by Lancaster County teens. Reported seatbelt use improved from 1991 to 1993 but thereafter changed little (Figures 1 and 2).

In 1999, 22.2% of teens reported riding a motorcycle in the past 12 months, as compares to 20.2% (1997), 23.9% (1995), 26.3% (1993), and 33.0% (1991) in previous years. Among these motorcycle riders, the percentage reporting that they never or rarely wear a helmet changed little during the 1990s, remaining at one in three riders in 1999 **(Fig. 1)**.

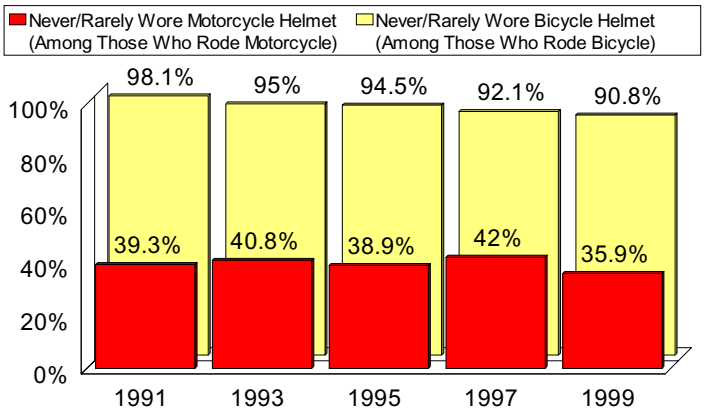
In 1999, 77.6% of teens reported that they rode a bicycle in the past month, as compares to 86.5% (1997), 77.9% (1995), 78.6% (1993), and 82.6% (1991) in previous years. Reported helmet usage remains infrequent among bicycle riders. In 1999, nine in ten bicycle riders (90.8%) reported that they never or rarely wear a helmet **(Fig. 1)**. This may be an improvement (though not a statistically significant one) from 1991, when 98.1% reported never or rarely wearing a helmet.

Increases in reported seatbelt use were also modest over the 1990s. The percentage of teens who reported always wearing their seatbelts when riding in a car driven by someone else increased from 16.7% in 1991 to 33.5% in 1993, but since 1993 has changed little **(Fig. 2)**. In 1999, still only one-third of teens (36.4%) reported always wearing a seatbelt when riding in a car driven by someone else.

These modest improvements in reported helmet and seatbelt use over the 1990s generally held true for respondents of different grades, males and females, and white and non-white teens. See the following pages for detail.

The trends were also consistent with trends in the same indicators for Nebraska (1993 to 1997)[1] and the U.S. (1991-1999)[2] as a whole.

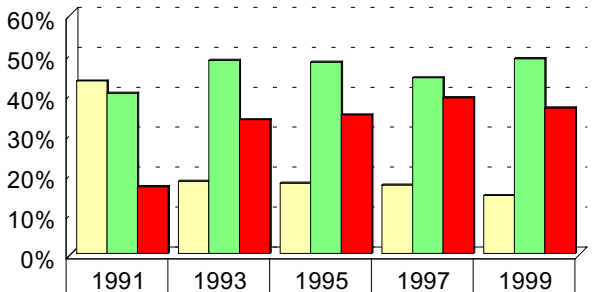
Figure 1: Helmet Use*
High School Students**



** Who Reported Riding a Motorcycle or Bicycle During the Past 12 Months

*Grade Adjusted

Figure 2: Seatbelt Use*
High School Students Who Rode With Someone Else



	1991	1993	1995	1997	1999
Never/Rarely	43.2%	18.1%	17.6%	17.1%	14.5%
Some/Most of Time	40.1%	48.4%	47.9%	44%	48.8%
Always	16.7%	33.5%	34.7%	39%	36.4%

*Grade Adjusted

1 Tables published by Buffalo Beach Company, Lincoln, NE

2 Centers for Disease Control and Prevention: Youth Risk Behavior Trends Fact Sheet, <http://www.cdc.gov/nccdphp/dash/yrbs/trend.htm>; *MMWR* Surveillance Summaries 1999, 1997, 1995, 1993.

Helmet and Seatbelt Use

Differences by Gender

Although reported helmet and seat belt use improved somewhat during the 1990s for male and female teens, males continued to put themselves at higher risk than females by infrequently using seatbelts and motorcycle helmets (Figs. 3 - 5).

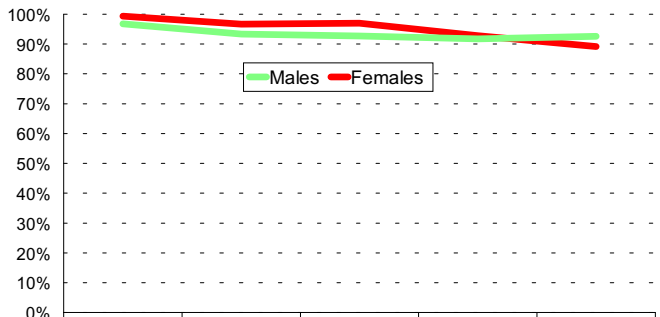
Of those teens who reported riding a bicycle during the past 12 months, the percentage of teens who reported never or rarely wearing a helmet when riding did not decline for either female and male teens from 1991 to 1999 (no statistically signficant decline) **(Fig. 3)**. There has been little difference between reporting by male or female bicycle riders that they never or rarely wear a helmet -- 92.6% vs. 89.1%, respectively, in 1999.

There was a clearer disparity between males and females in reported motorcycle helmet use **(Fig. 4)**. Male teens who ride motorcycles have been more likely to report wearing helmets "rarely or never" than female motorcycle riders -- 46.7% for males vs. 20.1% for females in 1999. Female helmet usage appeared to improve somewhat during the 1990s, although this was not a statistically significant improvement -- the percentage reporting never or rarely wearing a helmet was 31.1% in 1991 and 20.1% in 1999.

Females have also been more likely to report that they always wear a seatbelt when riding in a car driven by someone else -- for example, 41.0% for females vs. 31.6% for males in 1999 **(Fig. 5)**. This indicator improved for both males and females over the 1990s.

Figure 3: Rare Helmet Use (Bicycle)*

Never or Rarely Wore a Bicycle Helmet
(High School Students Who Reported Riding Bicycle in Past 12 Months)

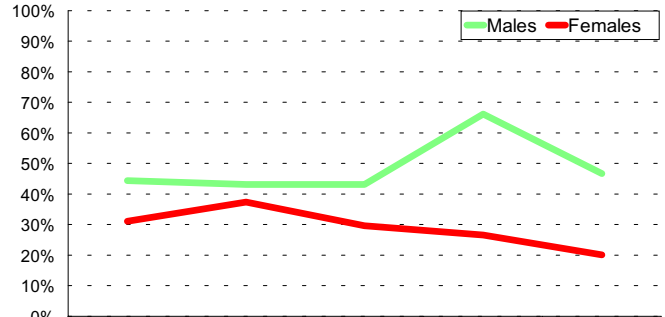


	1991	1993	1995	1997	1999
Males	96.8%	93.3%	92.7%	91.7%	92.6%
Females	99.3%	96.6%	97%	92.8%	89.1%

*Grade Adjusted

Figure 4: Rare Helmet Use (Motorcycle)*

Never or Rarely Wore a Motorcycle Helmet
(High School Students Who Reported Riding Motorcycle in Past 12 Months)

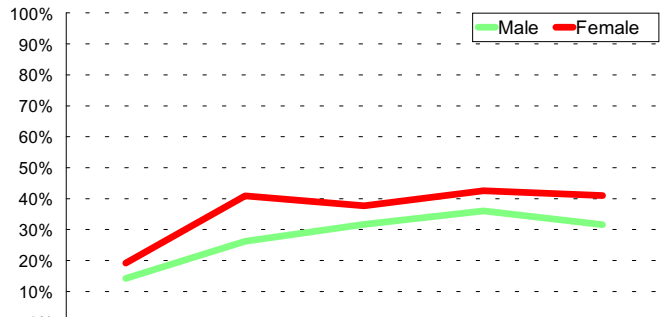


	1991	1993	1995	1997	1999
Males	44.4%	43.1%	43.1%	66.2%	46.7%
Females	31.1%	37.4%	29.6%	26.6%	20.1%

*Grade Adjusted

Figure 5: Seatbelt Use*

Always Wear a Seatbelt When Riding in a Car Driven by Someone Else
High School Students



	1991	1993	1995	1997	1999
Male	14.2%	26.2%	31.7%	36%	31.6%
Female	19.2%	40.9%	37.7%	42.6%	41%

*Grade Adjusted

Helmet and Seatbelt Use

Differences by Grade

From 1991 to 1999, teens in older grades were slightly more likely than those in younger grades to report seatbelt use. There were improvements in reported seatbelt use among all grades. Improvements and differences in reported bicycle helmet use were not sigificant (Figs. 6 and 7).

Bicycle helmet use reported by teens did not vary noticeably by grade during the 1990s **(Fig. 6)**. Slight (though not statisically significant) improvements in bicycle helmet use, 1991 to 1999, were apparent among all grades.

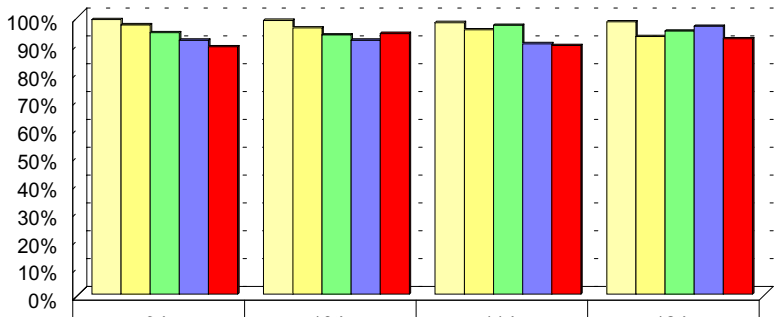
The number of motorcycle riders responding to the YRBS was too small to examine YRBS helmet use trends by grade.

Older teens were slightly more likely than younger ones to report seatbelt use during the 1990s **(Fig. 7)**. For example, in 1999, 39.9% of 12th graders vs. 33.5% of 9th graders reported that they always wear a seatbelt when riding in a car driven by someone else.

Statistically significant improvements in seatbelt use occurred among all grades from 1991 to 1999 **(Fig. 7)**. For example, the percentage of 12th graders reporting that they always wear a seatbelt, when riding in a car driven by someone else, increased from 16.8% in 1991 to 39.9% in 1999.

Figure 6: Rare Helmet Use (Bicycle) by Grade

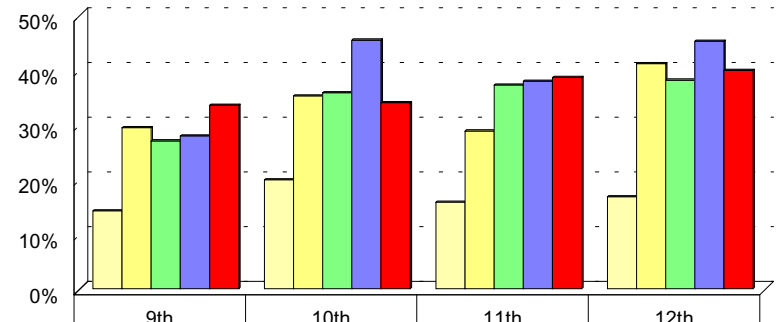
Never or Rarely Wore a Bicycle Helmet
(High School Students Who Reported Riding Bicycle in Past 12 Months)



	9th	10th	11th	12th
1991	98.6%	98.3%	97.5%	97.8%
1993	96.7%	95.6%	94.9%	92.5%
1995	93.9%	93.1%	96.5%	94.5%
1997	91.2%	91.2%	89.9%	96.2%
1999	88.8%	93.6%	89.3%	91.7%

Figure 7: Seatbelt Use by Grade

Always Wear a Seatbelt When Riding in a Car Driven by Someone Else
High School Students



	9th	10th	11th	12th
1991	14.2%	19.9%	15.8%	16.8%
1993	29.4%	35.2%	28.8%	41.1%
1995	27%	35.8%	37.2%	38.1%
1997	27.9%	45.4%	37.9%	45.2%
1999	33.5%	34%	38.6%	39.9%

Helmet and Seatbelt Use

Differences by Race

White teens have been slightly more likely than non-white teens to report seatbelt use. There was an improvement in reported seatbelt use among both white and non-white teens during the 1990s. Improvements or differences in bicycle helmet use were not statistically sigificant (Figs. 8 - 9).

YRBS sample sizes for major race/ethnic groups (Black, Hispanic, American Indian or Asian) were not large enough to reliably compare these groups or examine trends over time. However, selected comparisons were feasible between white teens and those who may be classified as "non-white" -- of minority race or Hispanic ethnicity.

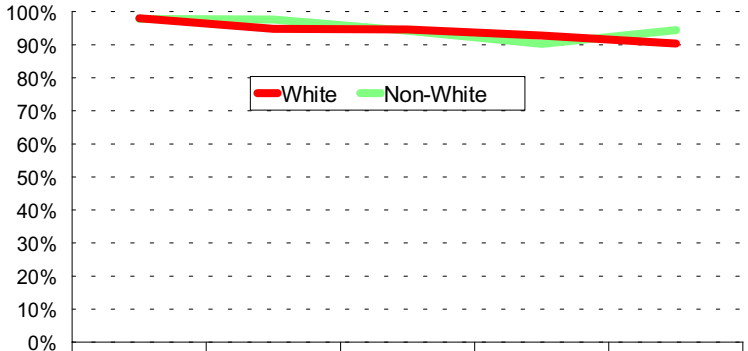
Of those teens who reported riding a bicycle during the past 12 months, the percentage who reported never or rarely wearing a helmet did not decline (no statistically significant decline) for either white or non-white teens from 1991 to 1999 **(Fig. 8)**. There has been little difference between white and non-white bicycle riders in their reports that they never or rarely wear a helmet -- 90.4% vs. 94.4%, respectively, in 1999.

The number of motorcycle riders was too small to examine YRBS helmet use trends by white/non-white status.

White teens have been more likely than non-white teens to report consistent seatbelt use **(Fig. 9)**. In 1999, white teens were 1.6 times more likely than non-white teens to report always wearing a seatbelt when riding in a car driven by someone else (37.7% of white teens and 23.0% of non-white teens). Reports of consistent seatbelt use increased for both groups from 1991 to 1999.

Figure 8: Rare Helmet Use (Bicycle)*

Never or Rarely Wore a Bicycle Helmet
(High School Students Who Reported Riding Bicycle in Past 12 Months)

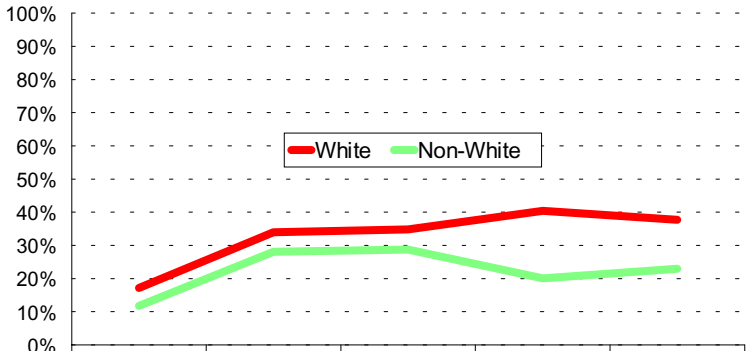


	1991	1993	1995	1997	1999
White	98%	94.8%	94.6%	92.8%	90.4%
Non-White	97.8%	97.6%	94.2%	90.3%	94.4%

*Grade Adjusted

Figure 9: Seatbelt Use*

Always Wear a Seatbelt When Riding in a Car Driven by Someone Else
High School Students



	1991	1993	1995	1997	1999
White	17.2%	34%	34.8%	40.4%	37.7%
Non-White	11.8%	28.1%	28.8%	20.1%	23%

*Grade Adjusted

Helmet and Seatbelt Use

Health Objectives for the Year 2010: *Reduce the incidence and severity of unintentional and intentional injuries.*

Public Health Discussion

Motor vehicle crashes remain a major public health problem and are the leading cause of death for Americans aged 1-24. The cost to society exceed $150 billion annually.[1]

Teenagers experience a disproportionately high incidence of crashes and crash deaths. Teenagers accounted for 10 percent of the U.S. population in 1996 and 15 percent of the motor vehicle deaths. The risk of crash involvement per mile among drivers 16 to 19 years old is 4 times greater than other drivers. The risk is greater at ages 16 and 17.[1]

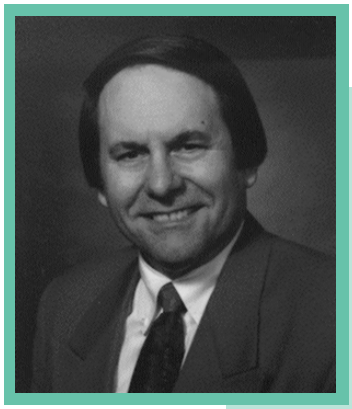
On January 1, 1993, Nebraska legislated mandatory seat belt use. The enactment of the law, increased enforcement and expanded public education efforts have resulted in a 66.9% seat belt use among Lancaster County drivers in 1999.[3]

Among children aged 1-14, crash injuries are the leading cause of death. The use of age-appropriate restraint systems can reduce this problem. All States have child restraint laws, thus more children now ride restrained.

Motorcycles are less stable than cars, and they have high performance capabilities. For these and other reasons, motorcycles are more likely than cars to be in crashes. When motorcycles crash, their riders lack the protection of an enclosed vehicle, so they are more likely to be injured or killed. Per mile traveled, the number of deaths on motorcycles is about 16 times the number in cars. Serious head injury is common among fatally injured motorcyclists, thus helmet use is important. Helmets are 29% effective in preventing motorcycle deaths and 67% effective in preventing brain injuries.[1]

Head injuries are the most serious type of injuries sustained by pedalcyclists of all ages. In 1996, 33% of pedalcyclists deaths were riders aged 16 and younger. More bicyclists were killed in urban areas than in rural areas (65% versus 35%). Bicycle helmets are a proven intervention that minimize the risk of head injury. Helmets are important for riders of all ages, especially because older bicyclists represent two-thirds of bicycle deaths.[1]

Compared to younger children, adolescents have a much higher mortality rate. Adolescents are much more likely to die from injuries sustained from motor vehicle traffic crashes. Injuries from motor vehicle crashes accounted for 36 percent of deaths among youth ages 15-19 during 1996. Motor vehicle injuries were the leading cause of death among adolescents for each year between 1980 and 1996, but the death rate declined by one-third during the time period. Little change, however, has occurred since 1992.[2]



"If we could get all teens to wear seatbelts, we would save 30 lives and over 1,000 serious injuries annually in our state."

Fred Zwonechek, Administrator
Nebraska Office of Highway Safety

Motor vehicle deaths are more common among male that among female adolescents. In 1996, the motor vehicle traffic death rate for males was nearly twice the rate for females.[2]

As of December 1997, 49 States have safety belt laws. Nebraska is one of over 30 States that has a secondary enforcement law for seat belt use. States that have upgraded their secondary enforcement law to a primary enforcement law have seen their State's safety belt use increase 10-15 % immediately following the passage of the law.

Safety belts, when used, are the single most effective means of occupants to reduce the risk of death and serious injury in a motor vehicle crash. The national use rate (as of December 1996) is 68%, according to the National Highway Traffic Safety Authority (NHTSA). Lap and shoulder belts are 45% effective in reducing deaths and 50% effective in preventing moderate to critical injuries to passengers. In 1996, if all passenger vehicle occupants had buckled up, an estimated 20,169 lives could have been saved.

Parental Roles and Responsibilities:

Role modeling safe and cooperative behaviors are essential to reduce deaths and injuries among teenagers and children resulting from motor vehicles, motorcycles and bicycles. These include, among others:

1. properly installed child safety seats
2. safe motor vehicle operation (driving habits that obey laws)
3. use of child safety restraints
4. properly fastened seat belts
5. use of motorcycle helmets
6. equipping young drivers through proper education and experience
7. monitor young driver's skills with enforced rules for violation
8. use bicycle helmets when driving bicycles on the street
9. keep open communications with your child about activities and interests.

Community Roles and Responsibilities:

Lincoln and Lancaster County residents can make a difference in reducing the injuries and deaths from motor vehicle, motorcycle and bicycle crashes by:

1. Supporting efforts to adopt a primary safety belt law
2. Initiating and supporting child safety seat checks, child safety seat loaner programs and community distribution programs to limited income families.
3. Creating more opportunities for youth recreation during after-school and weekend hours.
4. Enhancing existing bicycle safety courses and more strongly encouraging bicycle helmet use at community events.
5. Initiating and supporting no cost or low cost helmet distribution programs to those unable to purchase helmets.

Policy Makers' Roles and Responsibilities:

Public Health Infrastructure: Nearly thirty organizations and agencies have united efforts to expand public awareness to the needless injury and death of teenagers and children due to motor vehicle, motorcycle and bicycle crashes.

The Lincoln-Lancaster County Health Department, through leadership to a SAFE KIDS/SAFE COMMUNITIES Coalition, provides bicycle education and a low cost bicycle helmet distribution program. Additionally, child safety seat checks and a child safety seat loaner program are available. Through efforts of traffic safety staff, a youth driver training program for young drivers and a guardian are available. Encouragement of public and private collaborations can address issues contributing to the aforementioned injuries.

References:

1. U.S. Department of Health and Human Services. "Healthy People 2010 Objectives: Draft for Public Health Comment." September 1998

2. Federal Interagency Forum on Child and Family Statistics. "America's Children: Key National Indicators of Well-Being". 1999.

3. Lincoln-Lancaster County Health Department. "Healthy People 2010: Health Objectives for the Year 2010 for Lincoln and Lancaster County Nebraska." January 2000.